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Contraception 2024

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Contraception: a very basic introduction

The development of effective methods of contraception over the past 50 years has been one of the most significant developments in medicine.

Methods of contraception

Barrier methods

- Condoms

Daily methods

- combined oral contraceptive pill
- progesterone only pill

Long-acting methods of reversible contraception (LARCs):

- implantable contraceptives
- injectable contraceptives
- intrauterine system (IUS): progesterone releasing coil
- intrauterine device (IUD): copper coil

Contraceptive	Method of action	Notes
Condoms	Physical barrier	Relatively low success rate, particularly when used by young people Help protects against STIs
Combined oral contraceptive pill	Inhibits ovulation	Increases risk of venous thromboembolism Increases risk of breast and cervical cancer

Contraceptive	Method of action	Notes
Progestogen-only pill (excluding desogestrel*)	Thickens cervical mucus	Irregular bleeding a common side-effect
Injectable contraceptive (medroxyprogesterone acetate)	Primary: Inhibits ovulation Also: thickens cervical mucus	Lasts 12 weeks
Implantable contraceptive (etonogestrel)	Primary: Inhibits ovulation Also: thickens cervical mucus	Irregular bleeding a common side-effect Last 3 years
Intrauterine contraceptive device	Decreases sperm motility and survival	
Intrauterine system (levonorgestrel)	Primary: Prevents endometrial proliferation Also: Thickens cervical mucus	Irregular bleeding a common side-effect

*desogestrel is a type of progestogen-only pill which also inhibits

Contraception: mode of action

The table below is based on documents produced by the Faculty for Sexual and Reproductive Health (FSRH).

Standard contraceptives:

Contraceptive	Mode of action
Combined oral contraceptive pill	Inhibits ovulation
Progestogen-only pill (excluding desogestrel)	Thickens cervical mucus
Desogestrel-only pill	Primary: Inhibits ovulation Also: thickens cervical mucus
Injectable contraceptive (medroxyprogesterone acetate)	Primary: Inhibits ovulation Also: thickens cervical mucus
Implantable contraceptive (etonogestrel)	Primary: Inhibits ovulation Also: thickens cervical mucus
Intrauterine contraceptive device	Decreases sperm motility and survival
Intrauterine system (levonorgestrel)	Primary: Prevents endometrial proliferation Also: Thickens cervical mucus

Methods of emergency contraception:

Contraceptive	Mode of action
Levonorgestrel	Inhibits ovulation
Ulipristal	Inhibits ovulation

Contraceptive	Mode of action
Intrauterine contraceptive device	Primary: Toxic to sperm and ovum Also: Inhibits implantation

Combined oral contraceptive pill: counselling

Women who are considering taking the combined oral contraceptive pill (COC) should be counselled in a number of areas:

Potential harms and benefits, including

- the COC is > 99% effective if taken correctly
- small risk of blood clots
- very small risk of heart attacks and strokes
- increased risk of breast cancer and cervical cancer

Advice on taking the pill, including

- if the COC is started within the first 5 days of the cycle then there is no need for additional contraception. If it is started at any other point in the cycle then alternative contraception should be used (e.g. condoms) for the first 7 days
- should be taken at the same time every day
- the COCP is conventionally taken for 21 days then stopped for 7 days - similar uterine bleeding to menstruation. However, there was a major change following the 2019 guidelines. 'Tailored' regimes should now be discussed with women. This is because there is no medical benefit from having a withdrawal bleed. Options include never having a pill-free interval or 'tricycling' - taking three 21 day packs back-to-back before having a 4 or 7 day break

- advice that intercourse during the pill-free period is only safe if the next pack is started on time

Discussion on situations where efficacy may be reduced*

- if vomiting within 2 hours of taking COC pill
- medication that induce diarrhoea or vomiting may reduce effectiveness of oral contraception (for example orlistat)
- if taking liver enzyme-inducing drugs

Other information

- discussion on STIs

*Concurrent antibiotic use

- for many years doctors in the UK have advised that the concurrent use of antibiotics may interfere with the enterohepatic circulation of oestrogen and thus make the combined oral contraceptive pill ineffective - 'extra-precautions' were advised for the duration of antibiotic treatment and for 7 days afterwards
- no such precautions are taken in the US or the majority of mainland Europe
- in 2011 the Faculty of Sexual & Reproductive Healthcare produced new guidelines abandoning this approach. The latest edition of the BNF has been updated in line with this guidance
- precautions should still be taken with enzyme inducing antibiotics such as rifampicin

Combined oral contraceptive pill: choice of pill

The combined oral contraceptive pill method (COCP) varies by both the amount of oestrogen and progestogen and also the presentation (e.g. everyday pill/phasic preparation, patches etc)

For first time users

- consider using a pill containing 30 mcg ethinyloestradiol with levonorgestrel/norethisterone (e.g. Microgynon 30 - ethinylestradiol 30 mcg with levonorgestrel 150 mcg)

There have been two new COCPs developed in recent years which work slightly differently compared to traditional pills - Qlaira and Yaz.

Qlaira

Qlaira is a combination of estradiol valerate (as opposed to the usual ethinylestradiol) and dienogest. It has a quadraphasic dosage regimen which is designed to give optimal cycle control. Users take a pill everyday of a 28 day cycle, with 26 of the pills containing estradiol +/- dienogest and 2 of the pills being inactive. During the cycle the dose of estradiol is gradually reduced and that of dienogest is increased:

Day of cycle	Estradiol	Dieongest
1 - 2	3mg	-
3 - 7	2mg	2mg
8 - 24	2mg	3mg
25 - 26	1mg	-
27 - 28	-	-

The idea is to give women a more 'natural' cycle with more constant oestrogen levels. The efficacy is similar to that of other COCPs with a Pearl Index of 0.4 failures per 100 women-years in subjects aged 18-35 years

Disadvantages

- cost: currently £8.39 per month, which is considerably more than some standard COCPs which can cost < 70p per month
- limited safety data to date. For the time being the FSRH suggest using standard COCP UKMEC critera
- there are different missed pill rules for Qlaira (see below)

Missed pill rules for Qlaira

These are complicated! If a pill is taken 12 hours late it is classed as 'missed' (compared to 24 hours for standard COCPs). It's better to remember that the rules are different for Qlaira and know to look them up if it happens.

If a woman has missed more than 2 pills

- emergency contraception may be needed

If a woman has missed 1 pill:

Day	Action
1-17	Take missed pill immediately and the next tablet at the usual time (even if means taking two on same day) Continue with the tablet taking in the normal way Abstain or use an additional contraceptive method for 9 days
18-24	Discard the rest of the packet Start taking the Day 1 pill from a new packet immediately and continue taking these pills at the correct time Abstain or use an additional contraceptive method for 9 days
25-26	Take the missed tablet immediately and the next tablet at the usual time (even if it means taking two tablets on the same day) Additional contraception is not necessary
27-28	Discard the forgotten table and continue tablet taking in the normal way. Additional contraception is not necessary

Yaz

A product combining 20mcg ethinylestradiol with 3mg drospirenone is soon to be launched in the UK. In the US and Europe it is branded as Yaz and has an interesting 24/4 regime, as opposed to the normal 21/7 cycle. The idea is that a shorter pill-free interval is both better for patients with troublesome premenstrual symptoms and is also more effective at preventing ovulation. Studies have shown Yaz causes less pre-menstrual syndrome and blood loss reduced by 50-60%.

Combined oral contraceptive pill: missed pill

The advice from the Faculty of Sexual and Reproductive Healthcare (FSRH) has changed over recent years. The following recommendations are now made for women taken a combined oral contraceptive (COC) pill containing 30-35 micrograms of ethinylestradiol

If 1 pill is missed (at any time in the cycle)

- take the last pill even if it means taking two pills in one day and then continue taking pills daily, one each day
- no additional contraceptive protection needed

If 2 or more pills missed

- take the last pill even if it means taking two pills in one day, leave any earlier missed pills and then continue taking pills daily, one each day
- the women should use condoms or abstain from sex until she has taken pills for 7 days in a row. FSRH: *'This advice may be overcautious in the second and third weeks, but the advice is a backup in the event that further pills are missed'*
- if pills are missed in week 1 (Days 1-7): emergency contraception should be considered if she had unprotected sex in the pill-free interval or in week 1
- if pills are missed in week 2 (Days 8-14): after seven consecutive days of taking the COC there is no need for emergency contraception*

- if pills are missed in week 3 (Days 15-21): she should finish the pills in her current pack and start a new pack the next day; thus omitting the pill free interval

*theoretically women would be protected if they took the COC in a pattern of 7 days on, 7 days off

Combined oral contraceptive pill: advantages/disadvantages

Advantages of combined oral contraceptive pill

- highly effective (failure rate < 1 per 100 woman years)
- doesn't interfere with sex
- contraceptive effects reversible upon stopping
- usually makes periods regular, lighter and less painful
- reduced risk of ovarian, endometrial - this effect may last for several decades after cessation
- reduced risk of colorectal cancer
- may protect against pelvic inflammatory disease
- may reduce ovarian cysts, benign breast disease, acne vulgaris

Disadvantages of combined oral contraceptive pill

- people may forget to take it
- offers no protection against sexually transmitted infections
- increased risk of venous thromboembolic disease
- increased risk of breast and cervical cancer
- increased risk of stroke and ischaemic heart disease (especially in smokers)
- temporary side-effects such as headache, nausea, breast tenderness may be seen

Whilst some users report weight gain whilst taking the combined oral contraceptive pill a Cochrane review did not support a causal relationship.

Combined oral contraceptive pill: contraindications

The decision of whether to start a women on the combined oral contraceptive pill is now guided by the UK Medical Eligibility Criteria (UKMEC). This scale categorises the potential cautions and contraindications according to a four point scale, as detailed below:

- UKMEC 1: a condition for which there is no restriction for the use of the contraceptive method
- UKMEC 2: advantages generally outweigh the disadvantages
- UKMEC 3: disadvantages generally outweigh the advantages
- UKMEC 4: represents an unacceptable health risk

Examples of UKMEC 3 conditions include

- more than 35 years old and smoking less than 15 cigarettes/day
- BMI > 35 kg/m^2*
- family history of thromboembolic disease in first degree relatives < 45 years
- controlled hypertension
- immobility e.g. wheel chair use
- carrier of known gene mutations associated with breast cancer (e.g. BRCA1/BRCA2)
- current gallbladder disease

Examples of UKMEC 4 conditions include

- more than 35 years old and smoking more than 15 cigarettes/day
- migraine with aura
- history of thromboembolic disease or thrombogenic mutation

- history of stroke or ischaemic heart disease
- breast feeding < 6 weeks post-partum
- uncontrolled hypertension
- current breast cancer
- major surgery with prolonged immobilisation
- positive antiphospholipid antibodies (e.g. in SLE)

Diabetes mellitus diagnosed > 20 years ago is classified as UKMEC 3 or 4 depending on severity

Changes in 2016

- breast feeding 6 weeks - 6 months postpartum was changed from UKMEC 3 → 2

Combined oral contraceptive pill: comorbidities

Women who present for contraceptive advice are generally in good health. There are however a number of conditions which may affect the choice of contraceptive.

During this discussion reference will be made to the UKMEC recommendations on contraceptions made by the Faculty of Sexual and Reproductive Health (FSRH):

- UKMEC 2: advantages generally outweigh the disadvantages
- UKMEC 3: disadvantages generally outweigh the advantages
- UKMEC 4: represents an unacceptable health risk

Smoking

The FSRH make the following UKMEC recommendations with respect to the combined oral contraceptive pill (COCP) due to the increased risk of cardiovascular disease:

- UKMEC 2: age < 35 years
- UKMEC 3: age > 35 years and smoking < 15 cigarettes/day
- UKMEC 4: age > 35 years and smoking > 15 cigarettes/day

There is no increased risk of cardiovascular disease with progestogen-only contraceptives so they are classed as UKMEC 1, regardless of the patient's age/cigarette intake.

Obesity

Obesity increases the risk of venous thromboembolism for women taking the COCP. For the COCP the following recommendations are made:

- UKMEC 2: BMI 30-34 kg/m^2
- UKMEC 3: BMI >= 35 kg/m^2

All other methods of contraception have a UKMEC of 1.

Contraception: obese patients

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- UKMEC 2: BMI 30-34 kg/m^2
- UKMEC 3: BMI >= 35 kg/m^2

The combined contraceptive transdermal patch may be less effective in patients over 90kg.

All other methods of contraception have a UKMEC of 1.

Patients who have had a gastric sleeve/bypass/duodenal switch cannot have oral contraception ever again due to lack of efficacy, including emergency contraception.

Migraine

The COCP is contraindicated (i.e. UKMEC 4) in patients with a history of migraine with aura. For patients who have migraines without aura the recommendation by the FSRH is that the COCP is UKMEC 3 for continued prescribing and UKMEC 2 for initiation. Progestogen only methods such as the progestogen-only pill (POP), implant and injection are UKMEC 2 and are hence better choices.

Epilepsy

There are a number of factors to consider for women with epilepsy:

- the effect of the contraceptive on the effectiveness of the anti-epileptic medication
- the effect of the anti-epileptic on the effectiveness of the contraceptive
- the potential teratogenic effects of the anti-epileptic if the woman becomes pregnant

Given the points above, the FSRH recommend the consistent use of condoms, in addition to other forms of contraception.

For women taking phenytoin,carbamazepine, barbiturates, primidone, topiramate, oxcarbazepine:

- UKMEC 3: the COCP and POP
- UKMEC 2: implant
- UKMEC 1: Depo-Provera, IUD, IUS

For lamotrigine:

- UKMEC 3: the COCP
- UKMEC 1: POP, implant, Depo-Provera, IUD, IUS

If a COCP is chosen then it should contain a minimum of 30 µg of ethinylestradiol.

Epilepsy: contraception

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Contraceptive Choices for Young People

The Faculty of Sexual and Reproductive Health (FRSH) produced guidelines in 2010 concerning the provision of contraception to young people. Much of the following is based on those guidelines. Please see the link for more details.

Legal and ethical issues

- the age of consent for sexual activity in the UK is 16 years. Practitioners may however provide advice and contraception if they feel that the young person is 'competent'. This is usually assessed using the Fraser guidelines (see below)
- children under the age of 13 years are considered unable to consent for sexual intercourse and hence consultations regarding this age group should automatically trigger child protection measures

The Fraser Guidelines state that all the following requirements should be fulfilled:

- the young person understands the professional's advice
- the young person cannot be persuaded to inform their parents
- the young person is likely to begin, or to continue having, sexual intercourse with or without contraceptive treatment
- unless the young person receives contraceptive treatment, their physical or mental health, or both, are likely to suffer

- the young person's best interests require them to receive contraceptive advice or treatment with or without parental consent

Sexual Transmitted Infections (STIs)

- young people should be advised to have STI tests 2 and 12 weeks after an incident of unprotected sexual intercourse (UPSI)

Choice of contraceptive

- clearly long-acting reversible contraceptive methods (LARCs) have advantages in young people as this age group may often be less reliable in remembering to take medication
- however, there are some concerns about the effect of progesterone-only injections (Depo-provera) on bone mineral density and the UKMEC category of the IUS and IUD is 2 for women under the age of 20 years, meaning they may not be the best choice
- the progesterone-only implant (Nexplanon) is therefore the LARC of choice is young people

Contraception for women aged > 40 years

Whilst fertility has usually significantly declined by the age of 40 years women still require effective contraception until the menopause. The Faculty of Sexual and Reproductive Healthcare (FSRH) have produced specific guidance looking at this age group - 'Contraception for Women Aged Over 40 Years' - a link is provided below.

Specific methods

No method of contraception is contraindicated by age alone. All methods are UKMEC1 except for the combined oral contraceptive pill (UKMEC2 for women >= 40 years) and Depo-Provera (UKMEC2 for women > 45 years). The guidance issued by the FSRH contained a number of points which should be considered about each method:

Combined oral contraceptive pill (COCP)

- COCP use in the perimenopausal period may help to maintain bone mineral density
- COCP use may help reduce menopausal symptoms
- a pill containing < 30 µg ethinylestradiol may be more suitable for women > 40 years

Depo-Provera

- women should be advised there may be a delay in the return of fertility of up to 1 year for women > 40 years
- use is associated with a small loss in bone mineral density which is usually recovered after discontinuation

Stopping contraception

The FSRH have produced a useful table detailing how the different methods may be stopped. Please follow the link for the full table.

Method	Women < 50 years	Women >= 50 years
Non-hormonal (e.g. IUD, condoms, natural family planning)	Stop contraception after 2 years of amenorrhoea	Stop contraception after 1 year of amenorrhoea
COCP	Can be continued to 50 years	Switch to non-hormonal or progestogen-only method
Depo-Provera	Can be continued to 50 years	Switch to either a non-hormonal method and stop after 2 years of amenorrhoea OR switch to a progestogen-only method and follow advice below
Implant, POP, IUS	Can be continued beyond 50 years	Continue If amenorrhoeic check FSH and stop after 1 year if FSH >= 30u/l or stop at 55 years If not amenorrhoeic consider investigating abnormal bleeding pattern

Hormone Replacement Therapy and Contraception

As we know hormone replacement therapy (HRT) cannot be relied upon for contraception so a separate method of contraception is needed. The FSRH advises that the POP may be be used with in conjunction with HRT as long as the HRT has a progestogen component (i.e. the POP cannot be relied upon to 'protect' the endometrium). In contract the IUS is licensed to provide the progestogen component of HRT.

Combined oral contraceptive pill: special situations

Concurrent antibiotic use

- for many years doctors in the UK have advised that the concurrent use of antibiotics may interfere with the enterohepatic circulation of oestrogen and thus make the combined oral contraceptive pill ineffective - 'extra- precautions' were advised for the duration of antibiotic treatment and for 7 days afterwards
- no such precautions are taken in the US or the majority of mainland Europe
- in 2011 the Faculty of Sexual & Reproductive Healthcare produced new guidelines abandoning this approach. The latest edition of the BNF has been updated in line with this guidance
- precautions should still be taken with enzyme inducing antibiotics such as rifampicin

Switching combined oral contraceptive pills

- the BNF and Faculty of Sexual & Reproductive Healthcare (FSRH) appear to give contradictory advice. The Clinical Effectiveness Unit of the FSRH have stated in the Combined Oral Contraception guidelines that the pill free interval does not need to be omitted (please see link). The BNF however advises missing the pill free interval if the progesterone changes. Given the uncertainty it is best to follow the BNF

Combined contraceptive patch

The Evra patch is the only combined contraceptive patch licensed for use in the UK. The patch cycle lasts 4 weeks. For the first 3 weeks, the patch is worn everyday and needs to be changed each week. During the 4th week, the patch is not worn and during this time there will be a withdrawal bleed.

For delays in changing the patch, different rules apply depending what week of the patch cycle the woman is in.

If the patch change is delayed at the end of week 1 or week 2:

If the delay in changing the patch is less than 48 hours, it should be changed immediately and no further precautions are needed.

If the delay is greater than 48 hours, the patch should be changed immediately and a barrier method of contraception used for the next 7 days. If the woman has had sexual intercourse during this extended patch-free interval or if unprotected sexual intercourse has occurred in the last 5 days, then emergency contraception needs to be considered.

If the patch removal is delayed at the end of week 3:

The patch should be removed as soon as possible and the new patch applied on the usual cycle start day for the next cycle, even if withdrawal bleeding is occurring. No additional contraception is needed.

If patch application is delayed at the end of a patch-free week, additional barrier contraception should be used for 7 days following any delay at the start of a new patch cycle.

For further information please see the NICE Clinical Knowledge Summary on combined hormonal methods of contraception: http://cks.nice.org.uk/contraception-combined-hormonal-methods#top

Co-cyprindiol (Dianette)

The June 2013 edition of Drug Safety Update contained updated guidance on the use of co-cyprindiol (cyproterone acetate with ethinyloestradiol, Dianette).

Co-cyprindiol is licensed for the following conditions:

- severe acne in women refractory to prolonged oral antibacterial therapy
- moderately severe hirsuitism

It also provides effective contraception which has in part led to it's popularity in 'killing two birds with one stone'. Many women find when they switch to a standard combined oral contraceptive pill (COCP) their acne worsens. It is interesting to note that some post-marketing studies indicated that some women were being prescribed additional hormonal contraception as well as co-cyprindiol. This is unnecessary and further increases the risk of venous thromboembolism (VTE).

One of the reasons we try and limit the duration of co-cyprindiol treatment is our concerns about VTE. Interestingly, the increased risk (compared to COCPs containing levonorgestrel) appears similar to COCPs that contain desogestrel, gestodene or drospirenone. The current evidence shows the VTE risk to be about 1.5-2.0 times. Are we as likely to try and persuade a woman to stop Marvelon as we are Dianette?

Emergency contraception

There are two methods currently available in the UK:

Emergency hormonal contraception

There are now two methods of emergency hormonal contraception ('emergency pill', 'morning-after pill'); levonorgestrel and ulipristal, a progesterone receptor modulator.

Levonorgestrel

- mode of action not fully understood – acts both to stop ovulation and inhibit implantation
- should be taken as soon as possible – efficacy decreases with time
- must be taken within *72 hours of unprotected sexual intercourse (UPSI)**
- single dose of levonorgestrel 1.5mg (a progesterone)
    - *the dose should be doubled for those with a BMI >26 or weight over 70kg*
- 84% effective is used within 72 hours of UPSI
- levonorgestrel is safe and well-tolerated. Disturbance of the current menstrual cycle is seen in a significant minority of women. Vomiting occurs in around 1%
- if *vomiting occurs within 3 hours then the dose should be repeated*
- *can be used more than once in a menstrual cycle if clinically indicated*
- *hormonal contraception can be started immediately after using levornogestrel (Levonelle) for emergency contraception*

Ulipristal

- a *selective progesterone receptor modulator* currently marketed as EllaOne. The primary mode of action is thought to be inhibition of ovulation
- 30mg oral dose taken as soon as possible, no later than *120 hours after intercourse*
- concomitant use with levonorgestrel is not recommended
- Ulipristal may reduce the effectiveness of hormonal contraception. *Contraception with the pill, patch or ring should be started, or restarted, 5 days after having ulipristal*. Barrier methods should be used during this period
- *caution should be exercised in patients with severe asthma*
- repeated dosing within the same menstrual cycle was previously not recommended – however, this has now changed and *ulipristal can be used more than once in the same cycle*
- breastfeeding should be delayed for one week after taking ulipristal. There are no such restrictions on the use of levonorgestrel

Intrauterine device (IUD)

- a copper IUD is the *most effective method of emergency contraception and should be offered to all women* if they meet the criteria
    - if the criteria for insertion of a copper IUD are not met or is not acceptable to the woman, oral emergency contraception should be considered
    - in practice the vast majority of women choose oral emergency contraception, but it is important to offer the choice to all women given how effective copper IUDs are
- must be inserted within 5 days of UPSI, or
- if a woman presents after more than 5 days then *an IUD may be fitted up to 5 days after the likely ovulation date*
- may inhibit fertilisation or implantation

- prophylactic antibiotics may be given if the patient is considered to be at high-risk of sexually transmitted infection
- *is 99% effective regardless of where it is used in the cycle*
- may be left in-situ to provide long-term contraception. If the client wishes for the IUD to be removed it should be at least kept in until the next period

*may be offered after this period as long as the client is aware of reduced effectiveness and unlicensed indication

Intrauterine contraceptive devices

Intrauterine contraceptive devices comprise both conventional copper intrauterine devices (IUDs) and levonorgestrel-releasing intrauterine systems (IUS, Mirena®). The IUS is also used in the management of menorrhagia

Effectiveness

- both the IUD and IUS are more than 99% effective

Mode of action

- IUD: primary mode of action is prevention of fertilisation by causing decreased sperm motility and survival (possibly an effect of copper ions)
- IUS: levonorgestrel prevents endometrial proliferation and causes cervical mucous thickening

Counselling

- **IUD**
  - can be relied upon immediately following insertion
  - the majority of IUDs with copper on the stem only are effective for 5 years, whereas some of the IUDs that have copper on the stem and the arms of the T may be effective for up to 10 years
- **IUS**
  - can be relied upon after 7 days
  - the most common IUS (i.e. Mirena® - levonorgestrel 20 mcg/24 hrs) is effective for 5 years
  - if used as endometrial protection for women taking oestrogen-only hormone replacement therapy they are only licensed for 4 years

Potential problems

- IUDs make periods heavier, longer and more painful
- the IUS is associated with initial frequent uterine bleeding and spotting. Later women typically have intermittent light menses with less dysmenorrhoea and some women become amenorrhoeic
- uterine perforation: up to 2 per 1000 insertions and higher in breastfeeding women
- the proportion of pregnancies that are ectopic is increased but the absolute number of ectopic pregnancies is reduced, compared to a woman not using contraception
- infection: there is a small increased risk of pelvic inflammatory disease in the first 20 days after insertion but after this period the risk returns to that of a standard population
- expulsion: risk is around 1 in 20, and is most likely to occur in the first 3 months

New IUS systems

The Jaydess® IUS is licensed for 3 years. It has a smaller frame, narrower inserter tube and less levonorgestrel (LNG) than the Mirena® coil (13.5 mg compared to 52 mg). This results in lower serum levels of LNG.

The Kyleena® IUS has 19.5mg LNG and is also smaller than the Mirena® but is licensed for 5 years. It also results in lower serum levels of LNG.
The rate of amenorrhoea is less with Kyleena® compared to Mirena®.

Intrauterine contraceptive devices: insertion

Very few contraindications to insertion of an intrauterine contraceptive device exist. Below are some conditions mentioned by the Faculty of Family Planning and Reproductive Health Care. Please see the link for the full list.

UKMEC Category 3 (Risks outweigh benefits)*

- between 48 hours and 4 weeks postpartum (increased risk of perforation)
- initiation of method** in women with ovarian cancer

UKMEC Category 4 (Unacceptable risk)

- pregnancy
- current pelvic infection, puerperal sepsis, immediate post-septic abortion
- unexplained vaginal bleeding which is suspicious
- uterine fibroids or uterine anatomical abnormalities distorting the uterine cavity

NICE produced guidelines in 2005 on screening for sexually transmitted infections (STI) before insertion of an intrauterine contraceptive device

- *Chlamydia trachomatis* in women at risk of STIs
- *Neisseria gonorrhoeae* in women at risk of STIs, in areas where it is prevalent
- any STIs in women who request it

For women at increased risk of STIs prophylactic antibiotics should be given before inserting an intrauterine contraceptive device if testing has not yet been completed

*current venous thromboembolism (on anticoagulants) has recently been downgraded from UKMEC 3 to UKMEC 1

**as opposed to continuation of the method

Injectable contraceptives

Depo Provera is the main injectable contraceptive used in the UK*. It contains medroxyprogesterone acetate 150mg. It is given via in intramuscular injection every 12 weeks. It can however be given up to 14 weeks after the last dose without the need for extra precautions**

The main method of action is by inhibiting ovulation. Secondary effects include cervical mucus thickening and endometrial thinning.

Disadvantages include the fact that the injection cannot be reversed once given. There is also a potential delayed return to fertility (maybe up to 12 months)

Adverse effects

- irregular bleeding
- weight gain
- may potentially increased risk of osteoporosis: should only be used in adolescents if no other method of contraception is suitable
- not quickly reversible and fertility may return after a varying time

Contraindications

- breast cancer: current breast cancer is UKMEC 4, past breast cancer is UKMEC 3

*Noristerat, the other injectable contraceptive licensed in the UK, is rarely used in clinical practice. It is given every 8 weeks

**the BNF gives different advice, stating a pregnancy test should be done if the interval is greater than 12 weeks and 5 days – this is however not commonly adhered to in the family planning community

Implantable contraceptives

Implanon was the original non-biodegradable subdermal contraceptive implant which has been replaced by Nexplanon. From a pharmacological perspective Nexplanon is the same as Implanon. The two main differences are:

- the applicator has been redesigned to try and prevent 'deep' insertions (i.e. subcutaneous/intramuscular)
- it is radiopaque and therefore easier to locate if impalpable

Both versions slowly releases the progestogen hormone etonogestrel. They are typically inserted in the proximal non-dominant arm, just overlying the tricep. The main mechanism of action is preventing ovulation. They also work by thickening the cervical mucus.

Key points

- highly effective: failure rate 0.07/100 women-years – it is the most effective form of contraception
- long-acting: lasts 3 years
- doesn't contain oestrogen so can be used if past history of thromboembolism, migraine etc
- can be inserted immediately following a termination of pregnancy

Disadvantages include

- the need for a trained professional to insert and remove device
- additional contraceptive methods are needed for the first 7 days if not inserted on day 1 to 5 of a woman's menstrual cycle

Adverse effects

- **irregular/heavy bleeding** is the main problem: this is sometimes managed using a co-prescription of the combined oral contraceptive pill. It should be remembered to do a speculum exam/STI check if the bleeding continues
- 'progestogen effects': headache, nausea, breast pain

Interactions

- enzyme-inducing drugs such as certain antiepileptic and rifampicin may reduce the efficacy of Nexplanon
- the FSRH advises that women should be advised to switch to a method unaffected by enzyme-inducing drugs or to use additional contraception until 28 days after stopping the treatment

Contraindications

- UKMEC 3*: ischaemic heart disease/stroke (for continuation, if initiation then UKMEC 2), unexplained, suspicious vaginal bleeding, past breast cancer, severe liver cirrhosis, liver cancer
- UKMEC 4**: current breast cancer

*proven risks generally outweigh the advantages
**a condition which represents an unacceptable risk if the contraceptive method is used

Progestogen only pill: types

Second generation

- norethisterone
- levonorgestrel
- ethynodiol diacetate

Third generation

- desogestrel (Cerazette)

Cerazette

- new third generation type of progestogen only pill (POP) containing desogestrel
- inhibits ovulation in the majority of women
- users can take the pill up to 12 hours late rather than 3 hours like other POPs

Progestogen only pill: counselling

Women who are considering taking the progestogen-only pill (POP) should be counselled in a number of areas:

Potential adverse effects

- irregular vaginal bleeding is the most common problem

Starting the POP

- if commenced up to and including day 5 of the cycle it provides immediate protection, otherwise additional contraceptive methods (e.g. condoms) should be used for the first 2 days
- if switching from a combined oral contraceptive (COC) gives immediate protection if continued directly from the end of a pill packet (i.e. Day 21)

Taking the POP

- should be taken at the same time every day, without a pill-free break (unlike the COC)

Missed pills

- if < 3 hours* late: continue as normal
- if > 3 hours*: take the missed pill as soon as possible, continue with the rest of the pack, extra precautions (e.g. condoms) should be used until pill taking has been re-established for 48 hours

Other potential problems

- diarrhoea and vomiting: continue taking POP but assume pills have been missed - see above
- antibiotics: have no effect on the POP**
- liver enzyme inducers may reduce the effectiveness

Other information

- discussion on STIs

*for Cerazette (desogestrel) a 12 hour period is allowed

**unless the antibiotic alters the P450 enzyme system, for example, rifampicin

Progestogen only pill: missed pill

The missed pill rules for the progestogen only pill (POP) are simpler than those used for the combined oral contraceptive pill, but it is important not

to confuse the two.

'Traditional' POPs (Micronor, Noriday, Nogeston, Femulen)	Cerazette (desogestrel)
If less than 3 hours late • no action required, continue as normal	If less than 12 hours late • no action required, continue as normal
If more than 3 hours late (i.e. more than 27 hours since the last pill was taken) • action needed - see below	If more than 12 hours late (i.e. more than 36 hours since the last pill was taken) • action needed - see below

Action required, if needed:

- take the missed pill as soon as possible. If more than one pill has been missed just take one pill. Take the next pill at the usual time, which may mean taking two pills in one day
- continue with rest of pack
- extra precautions (e.g. condoms) should be used until pill taking has been re-established for 48 hours

Progestogen only pill: advantages/disadvantages

Advantages

- highly effective (failure rate = 1 per 100 woman years)
- doesn't interfere with sex
- contraceptive effects reversible upon stopping
- can be used whilst breast-feeding
- can be used in situations where the combined oral contraceptive pill is contraindicated e.g. in smokers > 35 years of age and women with a history of venous thromboembolic disease

Disadvantages

- irregular periods: some users may not have periods whilst others may have irregular or light periods. This is the most common adverse effect
- doesn't protect against sexually transmitted infections
- increased incidence of functional ovarian cysts
- common side-effects include breast tenderness, weight gain, acne and headaches. These symptoms generally subside after the first few months

Progestogen only pill: contraindications

The decision of whether to start a women a particular type of contraceptive is now guided by the UK Medical Eligibility Criteria (UKMEC). This scale categorises the potential cautions and contraindications according to a four point scale, as detailed below:

- UKMEC 1: a condition for which there is no restriction for the use of the contraceptive method

- UKMEC 2: advantages generally outweigh the disadvantages
- UKMEC 3: disadvantages generally outweigh the advantages
- UKMEC 4: represents an unacceptable health risk

Examples of UKMEC 3 conditions include

- active liver disease or past tumour
- liver enzyme inducers
- breast cancer more than 5 years ago
- undiagnosed vaginal bleeding
- ischaemic heart disease and stroke (initiation = UKMEC2)

Examples of UKMEC 4 conditions include

- pregnancy
- breast cancer within the last 5 years

Postpartum contraception

After giving birth, women require contraception after day 21.

Progestogen-only pill (POP)

- the FSRH advise 'postpartum women (breastfeeding and non-breastfeeding) can start the POP at any time postpartum.'
- after day 21 additional contraception should be used for the first 2 days
- a small amount of progestogen enters breast milk but this is not harmful to the infant

Combined oral contraceptive pill (COCP)

- absolutely contraindicated - UKMEC 4 - if breastfeeding < 6 weeks post-partum
- UKMEC 2 - if breastfeeding 6 weeks - 6 months postpartum*
- the COCP may reduce breast milk production in lactating mothers
- should not be used in the first 21 days due to the increased venous thromboembolism risk post-partum
- after day 21 additional contraception should be used for the first 7 days

The intrauterine device or intrauterine system can be inserted within 48 hours of childbirth or after 4 weeks.

Lactational amenorrhoea method (LAM)

- is 98% effective providing the woman is fully breast-feeding (no supplementary feeds), amenorrhoeic and < 6 months post-partum

An inter-pregnancy interval of less than 12 months between childbirth and conceiving again is associated with an increased risk of preterm birth, low birth weight and small for gestational age babies.

*this changed from UKMEC 3 in 2016

Female sterilisation

Female sterilisation

- failure rate: 1 per 200*
- usually done by laparoscopy under general anaesthetic
- generally done as a day case
- many different techniques involving clips (e.g. Filshie clips) , blockage, rings (Falope rings) and salpingectomy
- complications: increased risk of ectopic if sterilisation fails, general complications of GA/laparoscopy
- the current success rate of female sterilisation reversal is between 50-60%

*source = Royal College of Obstetricians and Gynaecologists

Contraceptive choices and sexual health for transgender and non-binary people

The Faculty of Sexual & Reproductive Healthcare published guidance on contraceptive choices and sexual health for transgender and non-binary people.

The guidance discusses contraceptives choices and sexual health recommendations for any individuals engaging in vaginal sex where there may be a risk of pregnancy and/or sexually transmitted infections.

The statement begins by stating that:
'A transgender individual is someone whose gender identity is not congruent with the sex they were assigned at birth. A transgender woman is someone who was assigned the sex of male but identifies as a woman. A transgender man is someone who was assigned the sex of female but identifies as a man. The term transgender is often shortened to ‘trans’. The term nonbinary describes any gender identity which does not fit the male and female binary.'

It stresses the importance of sensitive communication and offering individuals options that take into account their personal preferences, co-morbidities, and any current medications or therapies.

With respect to sexually transmitted infections:

- Condoms and dental dams are recommended to all individuals at risk of sexually transmitted infections. Condoms may be considered as a contraceptive choice, but efficacy in prevention of pregnancy may be considered sub-optimal, with a failure rate quoted as 18% with typical use (2% failure rate with perfect use).
- Cervical screening should be offered to all sexually active individuals with a uterus.
- Human papillomavirus vaccinations should be offered to all sexually active individuals.
- Individuals engaging in anal sex and rimming should be advised of the risk of hepatitis A & B and offered vaccinations.
- Individuals at risk of HIV transmission should be advised of the availability of pre-exposure prophylaxis and post-exposure prophylaxis as required.

Clearly, individuals who have undergone a hysterectomy and/or bilateral oophorectomy are no longer at risk of pregnancy. Likewise, the risk of impregnating would not be a consideration in patients that have undergone a bilateral orchiectomy. For patients seeking permanent contraception, a fallopian tube occlusion or a vasectomy may be the most appropriate solution and neither would be affected by hormonal therapy.

In terms of regular contraception in patients assigned female at birth and with a uterus:

- Testosterone therapy does not provide protection against pregnancy and if the patient becomes pregnant, testosterone therapy is contraindicated as can have teratogenic effects.

- Regimes containing oestrogen are not recommended in patients undergoing testosterone therapy as can antagonize the effect of testosterone therapy.
- Progesterone only contraceptives are not considered to have any detrimental effect on testosterone therapy and the intrauterine system and injections may also suspend menstruation.
- Non-hormonal intrauterine devices do not interact with hormonal regimes but can exacerbate menstrual bleeding, which may be unacceptable to patients.

In patients assigned female at birth where there is a risk of pregnancy following unprotected vaginal intercourse and the patient would like to avoid an unplanned pregnancy, emergency contraception may be required. Either of the available oral emergency contraceptive options may be considered as it is believed that neither oral formulation interacts with testosterone therapy. In addition, the non-hormonal intrauterine device may be considered, however, as mentioned, this may have unacceptable side effects in some patients.

In patients assigned male at birth, oestradiol, gonadotrophin-releasing hormone analogs, finasteride or cyproterone acetate, there may be a reduction or cessation of sperm production, however, the variability of the effects of such therapy is such that they cannot be relied upon as a method of contraception. Condoms should be recommended in those patients assigned male at birth engaging in vaginal sex wishing to avoid the risk of pregnancy.